



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2014-0521; Directorate Identifier 2014-NE-11-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; CFM International S.A. Turbofan Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to adopt a new airworthiness directive (AD) for all CFM International (CFM) S.A. CFM56-7B series turbofan engines. This proposed AD was prompted by a dual engine thrust instability event that resulted in the overspeed and in-flight shutdown (IFSD) of one engine. This proposed AD would require modification of the engine by removing full authority digital engine control (FADEC) software, version 7BV4 or earlier, installed in the electronic engine controls (EECs) on CFM56-7B engines. We are proposing this AD to prevent a thrust instability event, which could lead to overspeed and IFSD of one or more engines, loss of thrust control, damage to the engine, and damage to the airplane.

**DATES:** We must receive comments on this proposed AD by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this AD, contact CFM International Inc., Aviation Operations Center, 1 Neumann Way, M/D Room 285, Cincinnati, OH 45125; phone: 877-432-3272; fax: 877-432-3329; email: [geae.aoc@ge.com](mailto:geae.aoc@ge.com). You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

#### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2014-0521; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Barbara Caufield, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7146; fax: 781-238-7199; email: [barbara.caufield@faa.gov](mailto:barbara.caufield@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2014-0521; Directorate Identifier 2014-NE-11-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

### **Discussion**

We have received reports of dual engine thrust instability events on CFM56-7B turbofan engines that resulted in overspeed and IFSD of one engine. These resulted from water-borne fuel contamination of the fuel supply causing a lag in the response of the control valve in the fuel metering unit (FMU). CFM has improved its FADEC software to help prevent the lag in the response of the FMU control valve, thereby mitigating these thrust instability events. This condition, if not corrected, could lead to overspeed and IFSD of one or more engines, loss of thrust control, damage to the engine, and damage to the airplane.

### **Relevant Service Information**

We reviewed CFM Service Bulletin (SB) No. CFM56-7B S/B 73-0203, dated June 9, 2014, and CFM SB No. CFM56-7B S/B 73-0204, dated June 9, 2014. The SBs describe procedures for the introduction of new FADEC software for the EECs.

### **FAA's Determination**

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

### **Proposed AD Requirements**

This proposed AD would require modification of the engine by removing FADEC software, version 7BV4 or earlier, installed in the EECs on CFM56-7B engines.

### **Costs of Compliance**

We estimate that this proposed AD would affect about 2,921 engines installed on airplanes of U.S. registry. We also estimate that it would take about 1 hour per product to comply with this proposed AD. The average labor rate is \$85 per hour. Based on these figures, we estimate the cost of the proposed AD on U.S. operators to be \$248,285.

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

## **Regulatory Findings**

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

## **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

- 2. Amend § 39.13 by adding the following new airworthiness directive (AD):

**CFM International S.A.:** Docket No. FAA-2014-0521; Directorate Identifier 2014-NE-11-AD.

**(a) Comments Due Date**

We must receive comments by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to all CFM International (CFM) S.A. CFM56-7B series turbofan engines.

**(d) Unsafe Condition**

This AD was prompted by a dual engine thrust instability event that resulted in the overspeed and in-flight shutdown (IFSD) of one engine. We are issuing this AD to prevent a thrust instability event, which could lead to overspeed and IFSD of one or more engines, loss of thrust control, damage to the engine, and damage to the airplane.

**(e) Compliance**

(1) Comply with this AD within the compliance times specified, unless already done.

(2) Within 6 months after the effective date of this AD, modify the engine by removing full authority digital engine control (FADEC) software, version 7BV4 or earlier, installed in the electronic engine controls.

**(f) Alternative Methods of Compliance (AMOCs)**

The Manager, Engine Certification Office, FAA, may approve AMOCs to this AD. Use the procedures found in 14 CFR 39.19 to make your request.

**(g) Related Information**

(1) For more information about this AD, contact Barbara Caufield, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New

England Executive Park, Burlington, MA, 01803; phone: 781-238-7751; fax: 781-238-7199; email: [barbara.caufield@faa.gov](mailto:barbara.caufield@faa.gov).

(2) CFM Service Bulletin (SB) No. CFM56-7B S/B 73-0203, dated June 9, 2014, and CFM No. SB CFM56-7B S/B 73-0204, dated June 9, 2014, which are not incorporated by reference in this proposed AD, can be obtained from CFM using the contact information in paragraph (g)(3) of this proposed AD.

(3) For service information identified in this proposed AD, contact CFM International Inc., Aviation Operations Center, 1 Neumann Way, M/D Room 285, Cincinnati, OH 45125; phone: 877-432-3272; fax: 877-432-3329; email: [geae.aoc@ge.com](mailto:geae.aoc@ge.com).

(4) You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

Issued in Burlington, Massachusetts, on September 25, 2014.

Ann C. Mollica,  
Acting Directorate Manager, Engine & Propeller Directorate,  
Aircraft Certification Service.

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